



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/845,454	04/30/2001	Bharath Rangarajan	F0662	3018

7590 03/10/2005
Himanshu S. Amin
Amin & Turocy, LLP
National City Center
1900 E. 9th Street, 24th Floor
Cleveland, OH 44114

EXAMINER

TRAN, BINH X

ART UNIT	PAPER NUMBER
----------	--------------

1765

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

47

Office Action Summary	Application No.		Applicant(s)	
	09/845,454		RANGARAJAN ET AL.	
	Examiner		Art Unit	
	Binh X Tran		1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) 13-24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 25 is/are rejected.
- 7) ☒ Claim(s) 10-12 is/are objected to.
- 8) ☒ Claim(s) 1-25 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is responsive to the Board of Patent Appeals and Interference decision mailed on 02-25-2005. Claims 1-25 are pending in this present application. Claims 13-24 are withdrawn from consideration. Claims 1-9, 25 are rejected, and claims 10-12 are objected by the examiner in previous office action. The Board of Patent Appeals and Interference affirmed the grounds of rejections of appealed claims 1-9. The Board of Patent Appeals and Interference remanded claim 25. Below is the detail rejection of claim 25 bases on the Board of Patent Appeals and Interference recommendation.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, since the elements in the claim, e.g. "means for partitioning a wafer", "scatterometry means for sensing", "means for controlling", and "means for selectively controlling" are written in a "mean-plus-function" format, it must be interpreted as corresponding structure described in the specification or the equivalents thereof consistent with 35 U.S.C 112, sixth paragraph. In re Donaldson, 16 F.3d 1189, 1193, 29 USPQ 1845, 1848 (Fed. Cir. 1994) (en banc). However, since the instant

Art Unit: 1765

specification does not disclose adequate structure corresponding to each to the claimed elements and the equivalents for performing the recited function, it is impossible to determine the structure of the claimed elements and the equivalent thereof, as required by 35 U.S.C 112, six paragraph. See *Ex Parte Klumb*, 159 USPQ 694 (Bd. App. 1967).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Jahns (US 5,711,843) in view of Su (US 6,486,492) and further in view of Xu (US 6,483,580).

The instant claim recites a system for monitoring and regulating a trim process by partitioning the wafer, sensing the acceptability of the etch, controlling the etching of wafer portion. This is means plus function language that invokes 35 U.S.C 112 sixth paragraph. The details of the means include grid block on the wafer, scatterometry system (575), etch monitor system (570), etch component driving system (560) and processor (540) (instant specification page 13-14, Fig 5).

Jahns discloses a system for monitoring the etching process comprising:

a spectrometer with a detector array for sensing the acceptability of etching in at least one of the grid blocks of the wafer (Fig 7, equivalent with applicant's monitor system);

Art Unit: 1765

controller 707 for controlling the RF bias power supply, gas valve in order to control the etching of a wafer portion (Fig 7, equivalent with applicant's etch driving system, read on "means for controlling the etching of a wafer portion");

a computer (706) for selectively controlling the controller (707) for etching (Fig 7, col. 11 lines 30-61, equivalent with applicants' processor (540), read on "means for selectively controlling the etching means")

Jahns discloses a spectrometer with a detector for sensing the acceptability of the etching. However, Jahns fails to specify that the spectrometer is scatterometry. Xu discloses a spectroscopic scatterometer (read on applicant's scatterometry system (575)). It would have been obvious to one having ordinary skill in the art, at the time of invention to modify Jahns in view of Xu by using a scatterometry means because equivalent and substitution of one for the other would produce an expected result.

Jahns also fails to disclose means for partitioning a wafer into one or more grid block. Su discloses a means for partitioning a wafer into one or more grid block by using light or other radiation passing through the mask (col. 5 lines 6-18, Fig 1). It would have been obvious to one having ordinary skill in the art, at the time of invention, to modify Jahns and Xu in view of Su by including a means for partitioning a wafer into one or more grid because allow multiple patterns on the wafer.

Allowable Subject Matter

6. Claims 10-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Binh X Tran whose telephone number is (571) 272-1469. The examiner can normally be reached on Monday-Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Binh X. Tran

NADINE G. NORTON
SUPERVISORY PATENT EXAMINER
